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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,005	07/11/2003	Richard B. Rehrig	086332.1	4380

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EXAMINER

MAYO III, WILLIAM H

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/618,005	Applicant(s) REHRIG, RICHARD B.	
	Examiner William H. Mayo III	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figures 1-3 lack the proper cross-hatching which indicates the type of materials, which may be in an invention. Specifically, the cross hatching to indicate the conductor and flexible materials is improper. The applicant should refer to MPEP Section 608.02 for the proper cross-hatching of materials. Correction is required.

Specification

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

3. The abstract of the disclosure is objected to because in lines 10-11, the abstract refers to purported merits or speculative applications of the invention, which is improper content for the abstract. The applicant should delete the purported merits or speculative applications of the invention for the body of the abstract. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 8 & 18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, claim 8 (claim 18) doesn't add any additional structural limitations, since the claim limitations of claim 8 (claim 18) are in claim 6 (claim 16), and claim 7 (claim 17), which claim 8 (claim 18) depends, is depended upon claim 6 (claim 16).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5, 11, 13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Iketani et al (Pat Num 3,917,898, herein referred to as Iketani). Iketani discloses a power cable assembly (Figs 1-8) capable of being utilized in a water-cooled welding apparatus for conveying power from welding machine to a welding torch and cooling water from the torch to a circulator reservoir (Col 1, lines 13-50). Specifically, with respect to claim 1, Iketani discloses a power cable assembly (Fig 1) comprising a flexible cable (C) having a flexible electrical conductor (1) formed of bunched wires (Fig 4), a layer of flexible material (5) encasing the conductor (1) and defining a plurality of projections (not numbered) extending radially therefrom (Fig 4), and an outer flexible conduit (6) disposed about the conductor (1) and the encasing layer (5), wherein the projections spaces the conduit (6) from the conductor (1) to define a water flow path (4) extending along the conduit (6) and surrounding the conductor (1) for the effective dissipation of heat in the conductor (1, Col 3, lines 5-10). With respect to claim 3, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4). With respect to claim 5, Iketani discloses that the projections (not numbered) abut the flexible conduit (6) so as to position the conductor (1) in substantial axial alignment with the conduit (6) to provide a substantially uniform water flow about the conductor (1, i.e. conductor is centered with equal passages surrounding it, Fig 4). With respect to claim 11, Iketani discloses a power cable assembly (Figs 1-8) capable of being utilized in air cooled welding apparatus for conveying power and inert gas to a welding torch (Col 1, lines 13-50), wherein the power cable assembly (Fig 1) comprises a flexible cable (C) having a flexible electrical

conductor (1) formed of bunched wires (Fig 4), a layer of flexible material (5) encasing the conductor (1) and defining a plurality of projections (not numbered) extending radially therefrom (Fig 4), and an outer flexible conduit (6) disposed about the conductor (1) and the encasing layer (5), wherein the projections spaces the conduit (6) from the conductor (1) to define a gas flow path (4) extending along the conduit (6) and surrounding the conductor (1). With respect to claim 13, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4). With respect to claim 15, Iketani discloses that the projections (not numbered) about the flexible conduit (6) so as to position the conductor (1) in substantial axial alignment with the conduit (6) to provide a substantially uniform gas flow about the conductor (1, i.e. conductor is centered with equal passages surrounding it, Fig 4). With respect to claim 17, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 4, 6-10, 12, 14, and 16-24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Iketani (Pat Num 3,917,898) in view of Madry (DE Pat Num 36 32 722A1). Iketani discloses a power cable assembly (Figs 1-8) capable of being

utilized in a water cooled welding apparatus for conveying power from welding machine to a welding torch and cooling water from the torch to a circulator reservoir (Col 1, lines 13-50) as disclosed above with respect to claims 1 & 11. Specifically, with respect to claims 7 & 17, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4). With respect to claim 9, Iketani discloses that the power cable assembly (Fig 1) comprises a flexible cable (C) having an outer flexible conduit (6), a flexible electrical conductor (1) formed of bunched wires disposed within the conduit (6, Fig 4), a layer of flexible material (5) encasing the conductor (1) and a plurality of projections (not numbered) extending radially therefrom (Fig 4) from encasing layer (6) and spacing the conductor (1) and encasing layer (6) from the outer flexible conduit (6) so as to define a water flow path within the conduit extending along the conduit (6) and surrounding the conductor (1) to define a water flow path (4) extending along the conduit (6) and surrounding the conductor (1) for the effective dissipation of heat in the conductor (1, Col 3, lines 5-10) and a pair of end fittings (not numbered, Fig 1). With respect to claim 10, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4). With respect to claim 19, Iketani discloses that the power cable assembly (Fig 1) comprises a flexible cable (C) having an outer flexible conduit (6), a flexible electrical conductor (1) formed of bunched wires disposed within the conduit (6, Fig 4), a layer of flexible material (5) encasing the conductor (1) and a plurality of projections (not numbered) extending radially therefrom (Fig 4) from encasing layer (6) and spacing the conductor (1) and encasing layer (6) from the outer flexible conduit (6) so as to define a

gas flow path within the conduit (6) extending along the conduit (6) and surrounding the conductor (1, Col 3, lines 5-10) and a pair of end fittings (not numbered, Fig 1) capable of securing the power cable assembly between the welding torch and welding machine in fluid and electrical communication (Fig 1). With respect to claim 20, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4). With respect to claim 21, Iketani discloses that the power cable assembly (Fig 1) having a pair of end fittings (not numbered, Fig 1) capable of being utilized in a water cooled apparatus, the assembly comprising a flexible cable (C) having a an outer flexible conduit (6), a flexible electrical conductor (1) formed of bunched wires disposed within the conduit (6, Fig 4), a layer of flexible material (5) encasing the conductor (1) and a plurality of projections (not numbered) extending radially therefrom (Fig 4) from encasing layer (6) and spacing the conductor (1) and encasing layer (6) from the outer flexible conduit (6) so as to define a water flow path within the conduit extending along the conduit (6) and surrounding the conductor (1) to define a water flow path (4) extending along the conduit (6) and surrounding the conductor (1). With respect to claim 22, Iketani discloses that the radial projections (not numbered) are integrally formed with the layer of flexible material (5, Fig 4).

However, Iketani doesn't necessarily disclose the flexible material being a plastic material having a thickness within the range of about 0.008-0.015 inches (claims 2, 4, 6, 8-10, 12, 14, 16, 18-19, and 23-24).

Madry teaches a high voltage power cable (Figs 1-2) that reduces capacitance thus enabling fast current and voltage changes (see basic abstract 2 & 3). Specifically,

Madry teaches a cable (Fig 1) comprising a flexible material (3) having projections (4) which is surrounded by a conduit (5), wherein the projections (4) create passages (6) for the cooling of the cable (Fig 1), and wherein the flexible material (3) is made of a plastic material (i.e. polyethylene) having a thickness (see abstract, Fig 1).

With respect to claims 2, 4, 6, 8-10, 12, 14, 16, 18-19, and 23-24, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable of Iketani to comprise the flexible plastic material configuration as taught by Madry because Madry teaches that such a configuration reduces capacitance thus enabling fast current and voltage changes (see basic abstract 2 & 3) and since it has been held to be within general skill of a worker in the art to select a known material, such as polyethylene, on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claims 2, 4, 6, 8-10, 12, 14, 16, 18-19, and 23-24, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the flexible material plastic material of modified Iketani to comprise thickness within the range of about 0.008-0.015 inches, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Kojima et al (JP 03-53491), Goodman (Pat Num

3,801,724), Inoue (Pat Num 4,661,674), Kasper (Pat Num 5,317,804), Kasper (pat Num 5,527,994), and Krupnicki (Pat Num 5,378,870), all of which disclose water cooled assemblies.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (571)-272-1978. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William H. Mayo III
Primary Examiner
Art Unit 2831

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July 10, 2004